

Trends in Demographics and Information Technology Affecting Visitor Center Use: Focus Group Report

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July 2003



NPS SOCIAL SCIENCE PROGRAM

Executive Summary

On March 11, 2003 a focus group organized by the NPS Park Planning and Special Studies Program and the NPS Social Science Program met at Turkey Run Park on the George Washington Memorial Parkway. The purpose of the meeting was to assist the NPS in planning visitor centers and related projects that are cost-effective and of appropriate scope and size. The focus group provided information on trends in demographics and information technology that could inform the planning and design of visitor centers and other park facilities.

Group participants discussed important trends and developments in recreation and heritage tourism, as well as demographic and information-technology trends that might affect participation in recreation and tourism and the use of visitor centers over the next 20 years. Key points from the discussion include:

- Developments in information technology are significantly affecting the expectations of travelers to outdoor areas such as national parks. Expectations about park visits among a technologically literate “digirati” differ dramatically from those of earlier generations.
- The increasing size and changing composition of the US population has major implications for the NPS and for the use and non-use of parks and visitor centers. The fastest-growing segment of the US population is made up people who are under-represented in visits to national parks, including Latinos and other peoples of color.
- Although visitors’ needs won’t change much over the next 20 years, their expectations for how the NPS will meet these needs will be different. People will increasingly want portable, mobile information that goes through the park with them. They will expect to download a trail map into a personal digital assistant, as well as information on current traffic and weather conditions. Up-to-date data satisfying the needs of individual visitors will be delivered on demand in real time, wherever and whenever people want it.
- Visitors will expect the information they receive to be interactive and personalized. They will want it to be engaging, age-appropriate, culture-appropriate, and in preferred languages.
- In a real sense, parks and visitor centers will travel to people. The information and educational functions of visitor centers will extend beyond the walls of buildings, promoting awareness of the National Park System and facilitating pre-trip planning, travel to and from parks, and post-trip recollection and sharing. Parks will be able to reach farther beyond their boundaries and contact a greater diversity of visitors and potential visitors than ever before.
- There is much that planners and social scientists do not fully understand about the impacts of demographic and information-technology trends. Research will be required to fill these knowledge gaps and assist park planners in meeting the needs and preferences of future visitors.

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Introduction

This report describes the results of a focus group conducted for the Park Planning and Special Studies Program of the National Park Service (NPS). The purpose of the focus group was to assist the NPS in planning visitor centers and related projects that are cost-effective and of appropriate scope and size. More specifically, the focus group provided information on trends in demographics and information technology that could inform the planning and design of visitor centers and other park facilities over the next 20 years.

Background

The House Appropriations Committee Report for FY 2002 expressed concern about the cost and size of proposed visitor centers, heritage centers, and environmental education centers in some national parks.¹ The committee asserted that several recent proposals for visitor facilities were unacceptable because they were predicated on unrealistic increases in visitation and staff. These concerns were repeated in the conference committee report, specifically asserting that NPS General Management Plans (GMPs) tended to include oversized buildings and other projects that were not essential to the missions of the parks.

According to a review by the NPS, plans that appeared to have attracted the committee's attention were for parks with relatively small annual visitation coupled with what appeared to be costly new visitor facilities. Examples included Homestead National Monument, Grand Portage National Monument, and Washita National Battlefield. In response, the NPS Park Planning and Special Studies Program developed a series of actions that could be taken to examine the committee's concerns. Two of these were:

- Analyze the role of visitor facilities in light of the NPS mission, emerging technologies, and changing functions in education, interpretation, and orientation.
- Evaluate the accuracy of past visitation projections in GMPs and prepare guidelines on effective visitation forecasting methodologies.

¹NPS internal discussion paper, "General management plans and visitor facilities," December 7, 2001.

The focus group described in this report addresses the first of these two actions. A separate report, “Visitation Forecasting and Predicting Use of NPS Parks and Visitor Centers,” addresses the second action.

Focus-group Planning

The focus group on demographic and information-technology trends was organized in consultation with a professional facilitator experienced in NPS planning issues. Participants in the focus group were identified by the NPS Visiting Chief Social Scientist with the approval of the Chief of Planning. Those recruited either had national reputations for their work in information technology or demography or were recommended by such individuals. Participants included nine social scientists and engineers working in interpretive planning, demographic analysis, information technology, and alternative transportation (See the appendix for a list of participants.)

Method

The demographic and information-technology focus group met at Turkey Run Park on the George Washington Memorial Parkway on March 11, 2003. Members were sent a detailed guide before the meeting which included an agenda and a list of questions to be discussed. During the session, the facilitator led the participants through the discussion guide, addressing each question in turn. Participants were asked to consider demographic and information-technology trends 20 years into the future, the time frame typical of a park’s GMP. The overall approach was to begin with broad trends and developments in demographics and information technology and then turn to the implications of these trends for park planners and facility designers. To help focus the latter discussion, participants visited Great Falls Park, a nearby NPS unit in northern Virginia. This visit included an evaluation of the park’s visitor center and a discussion with park staff about current visitation and use of park facilities.

Comments made by participants were recorded on flip charts. In line with the facilitator’s preference, no other recording method was used.

Following the group discussion, the facilitator compiled the comments. These were reviewed by the Social Science Program and the Park Planning and Special Studies Program. In addition, the notes were sent to all participants for their review and comment. Clarifications were incorporated into the notes. Additional comments were recorded separately.



Figure 1 Demographics and information-technology focus group, Turkey Run Park, March 11, 2003.

It is important to understand what focus groups can and cannot do. Focus groups do *not* provide



Figure 2 Demographics and information-technology focus group.

comprehensive, documented information on a particular subject, such as information technology or demographic change. Other review methods are more suited to that task. Nor are focus groups designed to help a group reach a consensus or make decisions. Instead, focus groups elicit the full range of ideas, experiences, attitudes, and opinions of participants on a selected topic.² Through facilitated, focused interaction, participants provide a wealth of qualitative data not typically available from surveys, and group members stimulate each other with an exchange of ideas not possible in individual interviews.

Presentation of Results

Th results from the focus group are presented in four sections:

- Important trends and developments in demographics and information technology.
- Implications of these trends and developments for planners and designers of NPS visitor centers and related facilities.
- Reflections on Great Falls Park and its visitor center.
- General implications for the NPS.

Each of the sections is prefaced with a synopsis of the principal questions asked during the discussion. Following this, sub- topics are introduced with bold- faced titles, and brief background paragraphs place the participants' comments in the larger context of information-technology and demographic trends. Specific comments are then detailed in bullet statements drawn from the facilitator's notes. This allows for broad synthesis of the discussion, while also preserving insights of focus- group participants that illustrate the synthesis.

²Billson, J.M. 2003. *The power of focus groups - A training manual*. Barrington, RI: Skywood Press.

Trends and New Developments in Demographics and Information Technology

Synopsis

Important trends and developments in recreation and heritage tourism in the US today:

- Information technology is affecting the expectations of travelers to outdoor areas such as national parks.
- Increasing attention is being drawn in the US to the importance of heritage tourism.
- Recreation and leisure patterns, vacation patterns, and work patterns are changing.
- International travelers to the US are motivated by an interest in national parks and heritage.

Important demographic trends that might affect recreation activities, heritage tourism, and use of related facilities over the next 20 years:

- As baby boomers age, the needs and expectations of this generation of visitors will change. Further, the needs and expectations of the children of boomers will be different from those of their parents.
- The increasing size and changing composition of the US population has significant implications for the NPS.
- Fees to access and use parks and visitor facilities are viewed in different ways, depending on the use of the fees and the demographic characteristics of visitors or potential visitors.

Important trends and new developments in information technology that might affect participation in recreation and heritage tourism and use of related facilities over the next 20 years:

- People expect education to be entertaining and technologically sophisticated, especially if it's occurring outside the traditional classroom.
- The popularity of wireless handheld technology means that personalized information available on demand will become the norm. Visitors will expect information about a destination to be accessible before they arrive, personalized to meet their needs, and delivered while they are in their vehicles.
- Virtual reality (immersion) is another technology that makes many experiences accessible.
- Social scientists do not fully understand the causes and effects of new information technologies and their uses, and the future of some technologies is uncertain.

What Are Some of the Important Trends and Developments in Recreation and Heritage Tourism in the US Today?

The focus group opened with a discussion of current trends in information technology and in recreation and heritage tourism. This was done because most visits to NPS units occur within the context of recreational outings, including heritage tourism.

Information technology is affecting the expectations of travelers to outdoor areas such as national parks:

- There is a paradox – an increased use of information technology and cell phones, but people go to parks to get away from many kinds of technology. The issue is making useful technology inconspicuous.

There is a paradox – an increased use of information technology and cell phones, but people go to parks to get away from many kinds of technology. The issue is making useful technology inconspicuous.

- Another issue is how to meet the demand for travel information in advance in an environmentally friendly way. Eighty percent of requests for information on Illinois parks are made by internet. In Texas, the figure is 50 percent.
- In tourism, personalizing content is growing in importance. People want to see their stories in museums; information technology can help with this.
- Visitors still want to touch the “true cross.” They don’t want technology to get ahead of the experience. They don’t want to be alienated from the actual sites.

Increasing attention is being drawn in the US to the importance of heritage tourism:

- Comparing National Endowment for the Arts studies from the early 1980s with trends today, heritage tourism has become more pervasive. It used to be an activity of the rich.
- There is a continued upswing in heritage and ecotourism among all demographic groups, and projections for culture and heritage tourism travel stay high 25 years into the future.
- In Canadian studies of Americans’ tourism motivations, the top three types of travel are outdoor, heritage, and urban tourism.
- September 11th contributed to greater interest in who we are as Americans, and may have further stimulated heritage tourism travel.
- First Lady Laura Bush has formed an advisory group on heritage preservation, also giving it national visibility.

Recreation and leisure patterns, vacation patterns, and work patterns are changing:

- September 11th has led to a decline in some types of travel, such as international travel and long vacations.
- People are traveling closer to home, leading to higher use of state parks. They are taking shorter trips with shorter planning times.
- For many young people, leisure is more important than work. Leisure is their central focus, with work providing the resources to participate in leisure.
- Based on Roper data, in the 18 months since September 11th, the thing that’s changed for 25- to 37-year-olds is reconnecting with old friends and caring about relationships with people. This is related to the quality of time and wanting more serious interaction with people, places, and events one cares about.

- Traditionally, women are a critical part of how travel decisions are made, but the decision process is changing. This is partly influenced by the reality of many dual-income families. Even more important is that travel decisions are made by the partner who has the better skills or more commitment to using technology.
- There is more ecotourism and nature-based travel. This is the fastest growing sector of tourism, but it is still a small part of all tourism.
- Looking at work patterns, telecommuting is becoming more common – people working from home so they can live in one city and work in another.
- Productivity rates in the US workplace are the highest in the world. People work more hours, with less discretionary time overall. However, work is more flexible, and people can combine vacation and work.

International travelers to the US are motivated by an interest in national parks and heritage:

- People from other countries visiting the US are interested in parks, culture, and heritage.
- International travel data shows that national parks and natural resources are of particular interest to tourists visiting the US.

What Important Demographic Trends Might Affect Recreation Activities, Heritage Tourism, and Use of Related Facilities over the Next 20 Years?

Several demographic trends are significantly affecting the US population. The nation’s population is becoming more racially and ethnically diverse, aging at different rates within sub-groups, and growing in size overall. Each of these trends will affect future use and non-use of national parks and visitor facilities, as well as opinions about fees and what is needed and should be provided during a park visit.

As baby boomers age, the needs and expectations of this generation of visitors will change. Furthermore, the needs and expectations of the children of boomers will be different from those of their parents:

- We assume that the baby boomers’ perspective will still predominate in 20 years, but the young people who are replacing the baby boomers experience information technology differently. It is seamlessly integrated into their lives; they have grown up in a digital age, and this influences their expectations in ways different from their parents.
- Baby boomers will be in retirement, leading to increased leisure time and greater demands on parks. They are the mobile generation of the next 20 years.
- An aging boomer population faces increasing physical challenges which affect needs while in parks. For example, information and signing needs may change.
- The discretionary money of seniors is divided because they are paying for health care and prescription drugs. This may affect how and where they travel.

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- The shape of “age pyramids” is dramatically different across racial and ethnic groups in the US. Whites, American Indians, and African Americans are aging populations. Latinos and Asians in the US are younger.

The increasing size and changing composition of the US population has significant implications for the NPS:

- The growth in population and numbers of households is producing a larger pool of potential visitors to national parks, but also a larger pool of potential non-visitors.

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- The fastest growing segment of the US population is made up of people who are under-represented in visits to parks – Latinos and other peoples of color.
- There are geographic variations in these trends. In the Pacific West, Florida, and Texas, the population overall is growing, and the proportion of people of color is increasing. Texas and Florida will have more non-whites than whites by 2020.

- The Latino population is growing very fast in the southeastern US. There are triple-digit percentage increases in Georgia, North Carolina, and Tennessee. These have not been places of traditional Latino residence.
- There is a general trend toward a more educated population, but with bigger disparities between groups. Latinos trail white non-Hispanics and African Americans in educational levels. This disparity affects who visits many public facilities. Even at the free museums of the Smithsonian, the average visitor is extremely well-educated and affluent.
- Affluent African Americans with a college education would be drawn to sites interpreting events significant to African Americans, such as their role in the battle at Petersburg.
- According to the 2000 census, 11 percent of people in the US were born in another country. This leads to changes in the stories that people relate to. These people are not just visitors to the US, they live here and are looking for stories relevant to their own experiences.
- Washington, DC is an example of an international community, but in its parks most information is in English. This doesn't reflect the fact that the city is an international destination and has a linguistically diverse resident population.
- The problem in culturally diverse areas is how to create interpretive themes and messages that will be understood by a broad range of people. Technology can take care of multiple languages and other accessibility issues. It becomes a question of which second language is used or how many languages are used.
- There are increases in single-parent families, gay and lesbian households, and different household structures, such as extended families living under the same roof. This affects the types of facilities preferred in parks, concerns about personal and family security while away from home, and the types of stories that appeal to visitors.

- Research from focus groups in Missouri shows that African American females who are single heads of households are particularly concerned about their families' safety while visiting parks.

Fees to access and use parks and visitor facilities are viewed in different ways, depending on the use of the fees and the demographic characteristics of visitors or potential visitors:

- Research shows that many visitors are willing to pay a fee in return for an enhanced ability to do something, but this may vary widely by income group. There might be different demand curves for different demographic groups, depending on what the visitor expects to do in the park and the purpose of the fee.
- In gaining public acceptance of fees, it is important to communicate how the revenue from fees are used. Studies show that people prefer fee revenue to stay in the park where it was generated.
- Expectations about fees come into play at visitor centers. People may resent paying for the basic services provided in such a facility.
- There is a segment of the population that's strongly opposed to fees, no matter what the justification. They regard fees as "double taxation." For these people, whether or not to charge fees for access or use is not an economic issue, but a political one.
- For some visitors, fees could be a violation of their expectations for parks, i.e., "These are our parks."
- An argument in favor of fees is that if people pay an entrance fee, then it increases their appreciation of the park, facility, or service.
- Fees have other purposes besides revenue generation. They can be used to exclude people seen as undesirable, to ration use, or to regulate visitation within limits set by carrying- capacity plans.

What Important Trends and New Developments in Information Technology Might Affect Participation in Recreation and Heritage Tourism and Use of Related Facilities over the Next 20 Years?

Technological innovations in internet and wireless communication have increased the volume and diversity of information accessible to the public. This presents both challenges and opportunities to the NPS. Ways to reach people onsite and offsite have increased, but expectations for park visits among a technologically literate "digirati" will differ dramatically from the expectations of earlier generations.

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People expect education to be entertaining and technologically sophisticated, especially if it's occurring outside the traditional classroom:

- Entertainment and educational technology is increasingly portable and widespread. It's noticeable everywhere, even on the street.
- Many teenagers get their environmental education from the mass media, rather than from the traditional classroom.

- Museums in Europe are examining ways to use technology to improve visitors' experiences. The driving motive is to enhance the story, bring people back, and create a more knowledgeable and interested user.
- The interactive aspect of learning is growing, with more active learning in universities. This shapes visitors expectations for learning in parks and visitor centers.

The popularity of wireless handheld technology means that personalized information available anywhere on demand will become the norm. Visitors will expect information about a destination to be accessible before they arrive, personalized to meet their needs, and delivered while they are in their cars:

- The trend is wireless over cable. People will want real-time information in their vehicles, such as lodging availability, weather conditions, and tour schedules.
- Satellite radio access is affordable and offers good clarity. It is being built into all General Motors cars, creating an ability to receive information over long distances. For example, a station in California can be picked up by a car radio in New York.
- MP3 technology is a way to share information and tell stories, even geographically specific stories.
- Merging technologies into a single unit is likely to be even more common in the future, and these units will be even smaller.
- People will be able to combine geographic positioning systems telling them where they're at with an interpretive system on a personal digital assistant (PDA), creating location-aware devices. The military has these now.
- Providers will be able to offer more customized information services. This means "smarter" travel information tailored to the needs of individual tourists.
- It is absolutely a plus to have cell phone access at recreational sites. Young people don't see it as an intrusion, although it can create conflicts with those having more traditional views of what a park experience should be.
- Looking at intelligent transportation systems, all elements of technology will continue to be applied in vehicles. This includes automated highway systems, although most experts argue that this technology is still a long way off, due to driver distraction and other problems.

Virtual reality (immersion) is another technology that makes many experiences accessible:

- Virtual reality is now called "immersion." It can be used effectively for time travel. For example, the Belgians have put a holographic screen at a bus stop that people can look through to see the castle that used to be in that location. They can then step outside and see the land as it appears today.
- Virtual reality could be a management tool. Places off-limits to visitors could be re-created through a virtual immersive experience, which could act as a surrogate for the real one.
- However, is it possible to duplicate the satisfaction that comes with direct interaction using immersive technologies alone? More research on this is needed. People's motivations for visiting parks are often about experiencing nature, e.g., seeing wildlife and other natural or cultural features that can't be experienced directly at home.

Social scientists, engineers, and park planners do not fully understand the causes and effects of new information technologies, and the future of some technologies is uncertain:

- At least some differences in the use of information technology appear to be based in cultural preferences, mores, and norms. It's not just a case of education and income affecting knowledge, interest, and access.
- There is much that engineers still do not know about the impacts of information technology on humans and the environment. Decisions about how best to use these technologies in parks is risky without this knowledge.
- Historical technologies could be a critical and relevant part of the park experience to many visitors. The historical trolleys at Lowell National Historical Park and the red buses in Glacier

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National Park are examples. The Gettysburg map is something people go to see. Should this be replaced simply because it is not "modern?" Social scientists and park planners don't fully understand the role that these traditional technologies play in enhancing visitors' experiences.

- In the future, information on the World Wide Web could be coming from fewer and fewer outlets with less and less competition. How will this influence the ability of parks to communicate beyond their boundaries?
- At the same time, there's an explosion of information sources through the Web, yet search engines pick up only a fraction of the billion-plus pages that exist.
- Government may become much more involved in regulating the Web. China is effectively limiting Web access and Web content.
- The Web is not as vital and vibrant as it used to be. Some say that in 20 years it will be dead. This would negatively affect visitors' ability to plan, experience, and share the information about their trips to national parks.



Figure 3 Replica of historic tour bus used at Glacier National Park.

Implications of Demographic and Information-Technology Trends for Planners and Designers of NPS Visitor Centers

Synopsis

Things recreation and tourism planners and facility designers need to be thinking about over the next 20 years:

- There are many examples of how the NPS is responding well in the context of its mission to demographic trends and current or emerging technologies.
- Despite success stories, as the US becomes more culturally diverse and information technology continues to evolve, the NPS needs to be alert to changes in how people respond to parks and what their expectations for park experiences are.
- As new forms of information technology permeate society, it will increase the variety of ways in which visitors interact with park environments, as well as the alternatives available to the NPS for meeting the needs and preferences of visitors.
- Many opportunities exist for capitalizing on demographic and technological trends to improve planning and management in the NPS. There are concrete steps that can be taken to better serve a diverse population.

What the ideal NPS visitor center will look like 20 years from now:

- The ideal visitor center of the future will continue to provide many services that people find useful today.
- The ideal visitor center and park of the future will be more responsive to diverse publics and more effectively use new information technologies.

What Are the Things Recreation and Tourism Planners and Facility Designers Need to Be Thinking about over the Next 20 Years?

Some visitor needs and preferences are timeless and persist in the face of dramatic technological and demographic change. Conversely, other needs and preferences are shifting. In many cases, the NPS is responding well to demographic trends, changing needs, and both current and emerging technologies. Nonetheless, when planning visitor centers and other park facilities, challenges arise in responding to visitors' traditional needs and preferences while also addressing important new ways in which visitors experience park environments.

There are many examples of how the NPS is responding well in the context of its mission to demographic trends and current or emerging technologies:

- The NPS protects important areas. The resources are there for people to enjoy. The agency performs a great balancing act in a time of significant change.
- There has been good Web-site development over the last few years. The site (nps.gov) is easy to navigate and link to.

- The NPS Web site projects an image of the agency as diverse in culture and ethnicity, both in terms of employees and parks. The agency's larger national message and imaging are done well.

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- On the ground, alternative transportation systems are in place at Zion and Acadia national parks. The shuttle system at Zion puts one vehicle up a canyon rather than 50. This is responsive to capacity constraints, and the buses use alternative fuel.

- The NPS is also doing a good job meeting the increasing demand for many traditional uses. For example, when people go rafting in Grand Canyon National Park, a ranger speaks to them for 30 minutes in preparation. It works well.
- The live interpretation in national parks is excellent and enthusiastic. Yellowstone does a wonderful job of education.
- Partner groups can be incredibly productive. Partnering with the private sector, including both local and national groups, has been very successful. Ford Motor Company and Kodak have been prominent partners of national parks, promoting new as well as traditional transportation and information technologies.

Despite success stories, as the US becomes more culturally diverse and information technology continues to evolve, the NPS needs to be alert to changes in how people respond to parks and what their expectations for park experiences are:

- The NPS needs a fuller understanding of how technology provides advantages and disadvantages to different population segments, including non-visitors.
- Adapting the setting to the person is important. The NPS needs to find ways to change the situation to accommodate the growing diversity of potential visitors.
- Messaging will become more important as population diversity increases. How will the NPS tell people that they are welcome and the parks have something to offer them?
- People who don't come to parks have to be asked what they want, but the NPS also needs to examine the entire population in terms of motivations and expectations.
- Besides tracking the diversity of the US population, the NPS needs to track the diversity of park visitors and how a more diverse visitor population affects use of park facilities and resources.



Figure 4 Shuttle bus, Zion National Park.

As new forms of information technology permeate society, it will increase the variety of ways in which visitors interact with park environments, as well as the alternatives available to the NPS for meeting needs and preferences of visitors:

- The NPS needs to understand how visitors and potential visitors make decisions given a new set of information cues. How do new processes work and how do these influence visitors' choices before, during, and after their trips?
- Eventually, the NPS might not need physical visitor centers in the traditional sense, except for a bathroom and restaurant.
- The NPS needs to use technology to enhance the visitor experience and maintain the integrity of the parks. It needs to look at the totality of a visitor's park experience – pre-trip, onsite, and post-trip – and how technology influences these different phases of the visit.
- There's tremendous variation in how much information people will want in advance of a visit. For a local park, decisions to visit are less likely to be based on information provided by the NPS. But for a park like Yellowstone, people want information in advance to plan a trip.
- Social scientists don't understand what the young digirati want and how their relationships to technology and the value of knowledge differ from those of their parents. But significant differences do exist, including learning-style differences.
- The digirati are getting older, which is leading to a homogenization of the dominant culture, particularly with respect to norms, attitudes, and preferences related to information technologies and their acceptability in parks.
- Despite the pervasiveness of new forms of technology, not all children are growing up in a digital world. These differences in the degree of access to information technology are another form of population diversity.

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Many opportunities exist for capitalizing on demographic and technological trends to improve planning and management in the NPS. There are concrete steps that can be taken to better serve a diverse population:

- The NPS needs better research on psychographics, motivations, and expectations, and then it needs to use that research to match its product mix to a diverse population base.
- The NPS could facilitate a seamless visit by linking its information systems to other systems. Map Quest and the American Automobile Association provide examples of this. A park could tell visitors they might also like Y and Z if they like X. Additional links could be provided to information about Bureau of Land Management and Forest Service areas along travel routes. This might help some parks address visitor capacity issues.
- Parks could also weave their information in with that of local hotels, chambers of commerce, and other community organizations, many of which actively promote parks as destinations.

- The NPS tends to look at each park individually, but people go to Teton-Yellowstone-Glacier as a unit. Planning should be done with this in mind.
- There's a need for regional planning in broader ecosystem contexts. Examples exist in the NPS, such as in the Greater Yellowstone Ecosystem. But park planning should be wrapped more into existing regional planning processes, i.e., metropolitan planning organizations and rural planning. The trend is toward an increasingly complex institutional setting for decision-making.
- The NPS should not lose sight of the fact that interpretation and education can often do more than law enforcement to help maintain the resource. Information technologies may enhance this effort by communicating protection messages to a more diverse population.
- The NPS needs to keep up with new ecological trends and knowledge. Visitor centers and interpretation haven't done this. For example, it took Yellowstone six years to put up an exhibit on prescribed burning after the 1988 wildfires.
- Adopting new information technologies in parks has implications for staffing and personnel training. The NPS should include technological skills in the Interpretive Development Program so that staff become information-technology specialists. Support people are needed to keep the technology operating.

In some cases, robots could supplement park rangers. Stores are already using them. It will be important for NPS personnel to be adaptive and responsive to changes over time.

- In some cases, robots could supplement the routine work of park rangers. Stores are already using them. It will be important for NPS personnel to be adaptive and responsive to changes over time.
- If the NPS is going to have more information technology in place, it is easier to justify and get support for it if it is directed toward an educational mission.
- Messaging for each site could be done better. At the highest level, the National Park System needs a tone, mode, ambience, and atmosphere that's welcoming. This is done well by the NPS. But then parks should tell what's unique and welcoming about each place. Parks need to know how to communicate that higher-level message and tone, and then focus on their site.
- The NPS and Forest Service have decided to narrow down the information on Web sites so it can be downloaded by a 56K modem. That's a policy decision for uniformity of presentation and accessibility. A uniform look and feel is nice, but not at the cost of eliminating information, because people expect the opposite. The NPS should go to rich, multi-media presentations and beyond.

In Your Dreams, What Would the Ideal NPS Visitor Center Look Like 20 Years from Now?

What will the visitor center of the future be? How will it balance traditional needs and preferences of park visitors with those that are now emerging and will continue to emerge? What things about visitor centers should stay the same? What needs to change? Focus-group members offered a vision mixing traditional functions with new modes of communication and presentation. Their comments applied not only to visitor facilities, but to the entire visitor experience.

The ideal visitor center of the future will continue to provide many services that people find useful today, including:

- Restrooms.
- Directions.
- Park rules and guidelines.
- First aid and other emergency assistance.
- Specific information on the site.
- Face-to-face contact and personal stories, especially from enthusiastic and excited park rangers.
- Identification of resources seen in the park.
- Visual information on trends, seasonal differences, environmental, and cultural topics.
- Familiarity in a new place, i.e., a place that is safe, modern, and provides convenience and confidence-building for first-time visitors.
- Space protected from the elements to allow work with large numbers of people at one time.
- Interesting things to buy.
- Things that personalize the experience, including the passport stamp.
- Adventure and a unique experience.



Figure 5 Dickey Ridge visitor center, Shenandoah National Park.

The ideal visitor center and park of the future will be more responsive to diverse publics and more effectively use new information technologies:

- In one sense, the notion of a visitor center is an artifact. There can be a building with similar functions, but should it be called a visitor center? The ideal visitor center will really be a “resource center.”
- Most of the needs of visitors won’t change, but expectations for how the NPS should meet those needs will. The ideal visitor center will provide affordable, personal, customizable information: “Meet me where I am, and then take me where you want me to go.”
- The ideal visitor center will be more welcoming to a diverse audience. The staff will be more familiar with the motivations of diverse groups and able to satisfy them. They will be able to deliver personalized information any place on demand.
- The ideal visitor center will have state-of-the-art ecological, environmental, historical, and cultural themes delivered in a variety of ways. It will be both high- and low-tech, using effective communication technologies targeting diverse audiences.

- There is much research to show that the interpersonal connection is more important to some groups, such as women, Latinos, Asian Americans, and persons with people-centered learning styles. The ideal visitor center will capitalize on this. A low-tech approach is very useful for these visitors.
- The ideal visitor center will provide virtual experiences for non-visitors, so that everyone becomes a visitor to that park.
- The ideal visitor center will be multi-lingual, truly physically accessible, with restrooms and water. Travelers will be able to hook in on the Web before getting there. When they arrive, there will be people to connect with, and there will be opportunities to leave with a cohesive memory of the story.
- In the ideal visitor center, the needs of visitors will still be served through restrooms and a bookstore. But bookstores will be able to deliver a greater variety of publications by printing them on demand.
- The ideal visitor center will blend the best of the NPS with the best of SeaWorld and Disney's technology for entertainment and the best of the Smithsonian and other institutions for education. It will create a dynamic and interactive experience to attract a broader audience across age groups. And it will have a more attractive, engaging image.
- In the ideal visitor center, there will be an interactive decision tree to help plan stays. Visitors will be routed to different places in the park for different reasons and have their own experience.

There is much research to show that the interpersonal connection is more important to some groups, such as women, Latinos, Asian Americans, and persons with people-centered learning styles. The ideal visitor center will capitalize on this.

Visitors will be able to receive portable, mobile information, such as a digital photo, that goes into the park with them. Visitors will want to download a trail map into a PDA along with up-to-date data on traffic and weather conditions.

- In the ideal park visit, people will be able to look at the Ansel Adams photo of the ravine while standing at the ravine. They will be able to receive portable, mobile information, such as a digital photo, that goes into the park with them. Visitors will want to download a trail map into a PDA along with up-to-date data on traffic and weather conditions.

- There will be more advance information available before the ideal park visit, so that before people leave home they will have information on the park and will have paid many of its fees. When they arrive, the visitor center will provide a unique experience related to the park and will facilitate people getting easily to its attractions.
- During the ideal visit, people will be able to send a message by cell phone, like "The eagle just landed here," and others will "hive" to that spot. The destination phenomenon will still be there, but it will happen in a short time or instantaneously.

- During the ideal visit, alternative transportation will be so attractive that people won't want to bring their own cars into parks. Transportation will become a visitor center in itself.
- There will be interactive kiosks to provide greater depth of information during the ideal visit.
- There will be an immersion cave in some parks to simulate the river or the sound of what it's like in a wildfire.
- In the ideal visit people will be able to say, "Whoever I am, wherever I come from, my park experience will move me in some fundamental way so I care more about what we've got. I will meet the first person who saw this place and do time travel in some way, not in the visitor center, but in the field."



Figure 6 Falls overlook, Great Falls Park.

Reflections on Great Falls Park and Visitor Center

Synopsis

Ways the NPS could better respond to demographic trends and current or emerging technology at Great Falls Park:

- The Great Falls visitor center has several shortcomings in its design and its interpretation.
- In some ways, Great Falls Park is responding well to demographic trends and current or emerging information technology.
- In other ways, the park could better respond to these trends.
- The NPS should closely examine the need for a visitor center at Great Falls Park.

In What Ways Could the NPS Better Respond to Demographic Trends and Current or Emerging Technology at Great Falls Park?

For most focus-group members, the excursion to Great Falls Park was their first visit to this NPS unit. After a ranger-guided walk to a falls overlook, the participants went to the visitor center to meet with senior park staff to discuss visitation to Great Falls Park and use of the visitor center itself. They then returned to Turkey Run Park to reflect on this experience.

The Great Falls visitor center has several shortcomings in its design and its interpretation:

- There was no clear indicator that the building was a visitor center.
- I wasn't sure of the message. The interpretation wasn't thematic. The themes weren't obvious. I didn't know where to go first.
- It was unappealing and unwelcoming and had lighting problems. The picture window to the falls was blocked by a kayak.
- There was a lot of unused space inside. The aquarium could have been bigger.
- There was too much text in the exhibits. They didn't follow the ABCDs – make it attractive, brief, clear, and dynamic.
- The kids' area was better done. The space was better utilized, the lighting was better, there were links to history, hands-on things, and worksheets. Yet some of it looked tired. Kids know how to keyboard, but nothing with keyboards was there.
- There was a sign that asked about trash, but it didn't have anything to do with what was there.



Figure 7 Visitor center interior, Great Falls Park.

In some ways, Great Falls Park is responding well to demographic trends and current or emerging information technology:

- The picnic tables meet the needs of families.
- The film is an attraction for people.
- The educational programs might be meeting the needs of school-age kids.
- The park is asking important questions in the GMP process, such as who comes to the park, what do they want, how do we make the place more dynamic, how do we get people to visit again?

In other ways, the park could better respond to these trends:

- There are a lot of repeat visitors at Great Falls Park, which means there is a need for a different kind of visitor center than if there were lots of first-time visitors. The park needs more dynamic ways to convey its message.
- To better understand who visitors are, planners could look at the Visitor Services Project database, do another visitor survey, or look at census data for the DC metro area.
- The NPS could make the visitor center more friendly for people going through the park. There are a fair number of hikers, bikers, and horse riders, but there were no bike racks or other things that make it easier for these people to use the visitor center.
- There should be ways for people to get information in advance on areas that are full in the park.
- The park should do an analysis of the important messages and the role of a visitor center in communicating these messages.

The exhibits are historical and natural, but the purposes of most visits are largely recreational. As a visitor, I would want to know how people could use the place for multiple activities.

- The interpretive messages and story are not clear. The exhibits are historical and natural, but the purposes of most visits are largely recreational. As a visitor, I would want to know how people could use the place for multiple activities.
- The park could build the visitor center around the story. There are ways to build learning centers even on very dry topics like the law. Disney is the ultimate model for this.

- When nature offers such strong competition, the NPS has to work hard to make anything inside the visitor center meaningful and attention-grabbing.
- The displays are visual, but the falls are auditory. One way to get people to appreciate the site would be to focus their attention on the sound of the falls. This would also give visually impaired people a dramatic sense of the falls.
- The park could expand the number of places where it communicates information. There could be photographs on kiosks that are also interactive. Visitors could use cell phones to dial in and get visual displays, tapping into existing sources. There could be a way to get answers from cell phones or handheld devices when there's no ranger nearby.

- In the kids' area, the park could have "edutainment" stations on the watershed and the canal. These could also be open-air.
- The park could show an IMAX film that is dynamic and interesting.
- The NPS could build a lock on the outside of the visitor center and do a simulation of the rise and fall of the water level.
- The park could simulate the effects of different water levels. Floods are good for simulation.
- Thin-screen computers could deliver text with translation in different languages and in styles that different people would prefer. Now, the exhibits have 14-line long paragraphs.
- Simulations of kayaking or white-water rafting could be used.
- There is no place for visitors to leave a story about a special experience they had at the park. There could be a computer hooked to a projection system for this. Or people could be invited to leave their favorite digital snapshot. There could be a Web log for park visitors to describe their visit.
- Although both technology and quiet places provide information, some data suggests that people will react against too much technology. There is a need for places where people go just to listen to the sound of the falls. There should always be places in the park without technology for reflection, introspection, and revitalization.

There is a need for places where people go just to listen to the sound of the falls. There should always be places in the park without technology for reflection, introspection, and revitalization.

The NPS should closely examine the need for a visitor center at Great Falls Park:

- Is there a need for a traditional visitor center at this place? Great Falls Park has many unique characteristics, and there is no "one size fits all" visitor center. Facilities have to be matched with the site and the types of visitors.
- Park users seem to go to this visitor center for directions, the restroom, and the store. The interpretive component isn't a critical motivation and not what they reflect on when they're coming out.
- The park should ask people whether they feel there's a need for a visitor center in this area.

General Implications for the National Park Service

This section presents a summary and synthesis of the focus-group proceedings as interpreted by the author. Its purpose is to place the discussion at Turkey Run Park squarely in the context of larger issues faced by the NPS in dealing with demographic change and emerging information technologies. A second purpose is to consider the implications of the discussion for social science research in the NPS.

Through widespread diffusion of technological innovations, information is more accessible to people than it has ever been. At the same time, potential users of information technology in the US are becoming more diverse. The implications of these trends in demographics and information technology for NPS visitor centers and related facilities are considerable. Two important points integrate many of the comments from focus-group participants. The first addresses information-delivery modes and the second information content.

- *The traditional information and educational functions of visitor centers will increasingly extend beyond the walls of buildings. To an extent not previously possible, information and education will be delivered to visitors and potential visitors that promotes general awareness of the National Park System and facilitates pre-trip planning, travel to and from parks, and post-trip recollection and sharing.*

One of the major implications of trends in demographics and information technology is that visitor centers 20 years from now will become virtual information nodes, in addition to serving traditional functions. People will still appreciate and demand the traditional facilities and services that many visitor centers provide, such as restrooms, stores, face-to-face contact, shelter from the elements, and interpretive programs. Nevertheless, other technologies will be able to provide viable alternatives to brick and mortar buildings. The popularity of wireless and handheld internet appliances means that information can be provided in digital format wherever and whenever visitors or potential visitors desire it: at home, in personal vehicles, or aboard alternative transportation systems. This means that many of the informational and interpretive functions that have been located primarily in a park's visitor center will also be delivered to other venues frequented by users and potential users. In a real sense, visitor centers will travel to people, as well as *vice-versa*.

Many of the informational and interpretive functions that have been located primarily in a park's visitor center will also be delivered to other venues frequented by users and potential users. In a real sense, visitor centers will travel to people, as well as *vice-versa*.

Although park Web sites currently provide outreach to virtual visitors worldwide, the ability to tailor information to diverse audiences, rather than employing a "one Web site fits all" approach, is another

significant technological development. This leads to the second major implication of current trends in demographics and information technology.

- *Increasingly, visitors will expect information to be interactive and personalized. They will want it to be engaging, age-appropriate, culture-appropriate, and delivered in preferred languages. Up-to-date information addressing individual visitor needs will be delivered on demand in real time, wherever and whenever people want it.*

Information and interpretation delivered inside and outside the walls of visitor centers will be tailored to more effectively reach a growing diversity of visitors and potential visitors. People will expect to query reservation systems, monitor traffic and weather conditions in real time, and download interpretive materials on demand. The computer technology exists to make exhibits more dynamic, simulations more realistic, and to do this in multiple languages selected by visitors at the click of a mouse. Other products, such as entrance fees, camping fees, and use permits, could be purchased at home before a trip and validated onsite with electronic scanners, much the way tickets are currently purchased and printed at home for many entertainment and sporting events.

To an extent not previously possible, park visitors will have the ability to share the sounds and sights of their onsite experiences through Web logs and Web sites designed to collect and present digital photographs and personal stories about visits. Some of these sites may be housed on servers operated by parks, providing feedback to park planners and managers by describing what visitors found to be most interesting and worth sharing during their trips.

The NPS has been providing information and education outside of visitor centers for almost a century. What has changed is the technology to deliver this information, enabling parks to extend farther beyond their borders and to contact a greater diversity of people than ever before.

In one sense, much of what has been discussed in this report is not unfamiliar. The NPS has been providing information and education outside of visitor centers for almost a century. What has changed is the technology to deliver this information, enabling parks to extend farther beyond their borders and to contact a greater diversity of people than ever before. At the same time, the US population is becoming more ethnically, racially, and life-style diverse. This

means that both the need and the expectation for interactive and tailored information will grow.

Implications for Social Science Research in the NPS

The implications for the NPS of current trends in demographics and information technology don't end with their effects on how visitor centers of the future will be planned and designed. There is much that social scientists and planners do not yet understand about the impacts of these changes. Many of the knowledge gaps have been detailed in previous sections of this report, but are summarized here.

Social science research is needed to:

- Track trends in access to information and intelligent transportation technology by traditional and virtual visitors; to identify demographic differences in technology use; to examine the influence of cultural preferences, learning styles, mores, and norms on use; and to evaluate the effectiveness of new forms of information delivery on visitors' learning and enjoyment.
- Evaluate the extent to which the satisfaction that comes from direct interaction with park resources can be duplicated using immersive technologies.
- Better understand the impacts of information technology and intelligent transportation systems on visitors' well-being and the effects of this technology's infrastructure on resource quality.
- Investigate how traditional information and transportation technologies in parks influence visitor experiences *vs.* the effects of new and emerging technologies.
- Improve understanding of how visitors and potential visitors make decisions, given a new set of information cues, and document how these processes influence visitors' choices before, during, and after their trips.
- Evaluate the needs and preferences of the young digital natives and how their relationships to technology and the value they place on knowledge differ from those of their parents.
- Track changes in the diversity of visitors and non-visitors to parks in response to new park programs, facilities, and changing resource conditions.

Over the next 20 years, it is apparent that the pace of demographic and technological change will increase. The success of the NPS in satisfying visitor expectations will depend on its ability to respond to these large-scale shifts in the social and technological landscape. In the words of one focus-group participant, “The NPS has special responsibility for special places. Don’t get frustrated, but look forward, and expect new stuff and new people.”

“The NPS has special responsibility for special places. Don’t get frustrated, but look forward, and expect new stuff and new people.”

Appendix: Focus-Group Participants, Affiliations, and Interests

Dr. Myron Floyd

Associate Professor, Director of Center for Tourism Research and Development, University of Florida. Interests: Diversity, ethnicity, and their effects on travel to parks and protected areas.

Dr. Linda Jackson

Professor, Department of Psychology, Michigan State University. Interests: Motivational, affective, and cognitive antecedents and consequences of information-technology use.

Dr. Susan Jacobson

Professor and Director of Program for Studies in Tropical Conservation, University of Florida. Interests: Human dimensions of wildlife management, resource education, and program planning.

Mr. Michael Kelly

Senior Research Scientist, Western Transportation Institute, Montana State University. Interests: Information technology, alternative transportation systems, and their effects on visitor experiences in national parks.

Ms. Karen Lee

Manager, Information Age Exhibition, National Museum of American History, Smithsonian Institution. Interests: Visitor experiences in museums, including evaluation of visitors' use of immersive digital environments in museum exhibits.

Dr. Joseph O'Leary

Professor and Head, Dept. of Recreation, Park and Tourism Sciences, Texas A&M University Interests: Social behavior and travel patterns of domestic and international recreation consumers, analysis of recreation and leisure trends, social impacts of recreation resource development.

Dr. Katie Turnbull

Head, System Planning Division, Texas Transportation Institute, Texas A&M University System. Interests: Uses and evaluation of information technology in intelligent transportation systems in rural environments.

Dr. Marcella Wells

Interpretive Consultant. Interests: Interpretive planning and evaluation, exhibit design, and visitor use of interpretive facilities in parks and visitor centers.

Dr. Patricia Winter

Co-leader, U.S. Forest Service Wildland Recreation and Urban Culture Project, Riverside, CA. Interests: Social and economic trends and their effects on recreation behavior and demand.

About the NPS Social Science Program

The role and functions of the NPS Social Science Program are to: provide leadership and direction to the social science activities of the NPS, coordinate social science activities with other programs of the NPS, act as liaison with the USGS Biological Resources Division and other federal agencies on social science activities, provide technical support to parks, park clusters, support offices, and regional offices, and support a program of applied social science research related to national research needs of the NPS.

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Figure 1: NPS Social Science Program

Figure 2: NPS Social Science Program

Figure 3: National Park Service

Figure 4: National Park Service

Figure 5: NPS Social Science Program

Figure 6: NPS Social Science Program

Figure 7: NPS Social Science Program